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मानक

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“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 6258 (2003): o-Nitroanisole [PCD 9: Organic Chemicals Alcohols and Allied Products and Dye Intermediates]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
ओरथो-नाट्रोएनीसोल—विशिष्टि
(पहला पुनरीक्षण)

Indian Standard
O-NITROANISOLE—SPECIFICATION
(*First Revision*)

ICS 71.080.80

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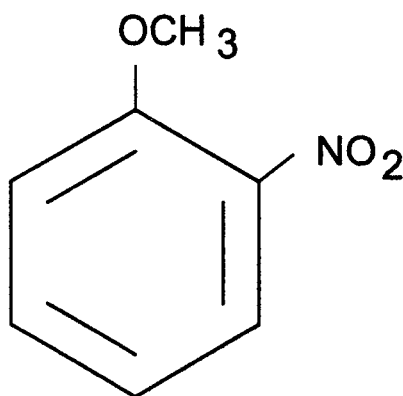
BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Dyes Intermediate Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1971 and has been revised in the light of experience gained during the long span of period. In this revision, thin layer chromatography has been included as the method of test to keep pace with the present trends in the industry.

o-Nitroanisole ($C_7H_7O_3N$) is used in manufacture of *o*-anisidine. It is represented by the following structural formula:



o-Nitroanisole
(Molecular Mass: 153)
CAS Registry No. (91-23-6)

The composition of the Committee responsible for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

O-NITROANISOLE—SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for *o*-nitroanisole.

2 REFERENCES

The following standards contain provisions which, through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards given below:

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water (<i>third revision</i>)
2552 : 1989	Steel drums (galvanized and ungalvanized) (<i>third revision</i>)
5299 : 2001	Methods for sampling and tests for dye intermediates (<i>first revision</i>)

3 REQUIREMENTS

3.1 Description

The material shall be in the form of light yellow to light brown liquid and shall be free from visible impurities.

3.2 The material shall also comply with the requirements given in Table 1.

4 PACKING AND MARKING

4.1 Packing

The material shall be packed in steel drums (*see* IS 2552) or as agreed to between the purchaser and the supplier.

4.2 Marking

Each container shall be securely closed and shall bear legibly and indelibly with the following information:

- a) Name of the material;
- b) Indication of the source of manufacture;
- c) Net mass;
- d) Lot or batch number; and
- e) Month and year of manufacture.

4.2.1 BIS Certification Marking

4.2.1.1 Each container may also be marked with the Standard Mark.

4.2.1.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made

Table 1 Requirements for *o*-Nitroanisole
(Clauses 3.2, 5.3.1 and 5.3.2)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex of this Standard	Clause of IS
(1)	(2)	(3)	(4)	(5)
i)	Crystallization point, °C, <i>Min</i>	10.1	—	8 of IS 5299
ii)	Purity by nitrite value, percent by mass, <i>Min</i>	98.5	—	13 of IS 5299
iii)	Matter insoluble in methanol percent by mass, <i>Max</i>	0.2	—	11 of IS 5299
iv)	Impurities:			
a)	<i>p</i> -Nitroanisole, percent by mass, <i>Max</i>	0.5	A	—
b)	<i>o</i> -Nitrochlorobenzene, percent by mass, <i>Max</i>	0.2	A	—
c)	<i>o</i> -Nitrophenol, <i>Max</i>	0.2	A	—

thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

5 SAMPLING

5.1 The method of drawing representative samples of the material shall be as prescribed in 4 of IS 5299.

5.2 Number of Tests

Tests for crystallization point, purity by nitrite value and impurities shall be conducted on each of the individual sample.

Test for determination of description shall be done on composite sample.

5.3 Criteria for Conformity

5.3.1 *For Individual Samples*

The lot shall be declared as conforming to the

requirements of this standard if each of the individual test results satisfies the relevant requirements given in 3.1 and Table 1.

5.3.2 *For Composite Samples*

For declaring the conformity of the lot to the requirements of matter insoluble and description while tested on the composite sample, the test result shall satisfy the relevant requirements given in Table 1.

6 TEST METHODS

6.1 Tests shall be conducted according to the methods prescribed and as indicated in 4 of Table 1.

6.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A

[Table 1, Sl No. (iv)]

THIN LAYER CHROMATOGRAPHIC ANALYSIS FOR
DETERMINATION OF IMPURITIES

A-1 GENERAL

Impurities are determined by thin layer chromatography. Reference may be made to IS 5299 for details of TLC test method to be followed. However, necessary details of test conditions are given below for guidance only:

a) Product name	:	<i>o</i> -Nitroanisole
b) Sample solution (on 100 percent basis)	:	1 percent in acetone
c) Application/volume for spotting	:	10 µl (for sample) 2 µl and 4 µl (for impurities)
d) Standard	:	Reference standard
e) Test substance for impurities	:	(1) <i>o</i> -Nitrophenol (2) <i>p</i> -Nitroanisole (3) <i>o</i> -Chloronitrobenzene (0.05 percent solution in acetone)
f) Plate type	:	Silica gel G
g) Eluent	:	P.E (60-80°C) : Ether 70 : 30 (Ammonia Atmosphere. *Saturated *Twice Run)
h) Elution time	:	1 h
j) Temperature	:	25 ± 5°C
k) Detection spray	:	¹⁾ SnCl ₂ solution + PDAB solution
m) Evaluation	:	Semi-quantitative
n) Approximate R _f value—Main band	:	<i>o</i> -Nitroanisole : R _f 0.4
—Impurities	:	<i>p</i> -Nitroanisole : R _f 0.5 <i>o</i> -Chloronitrobenzene : R _f 0.8 <i>o</i> -Nitrophenol : R _f 0.7

¹⁾SnCl₂ solution : 10 percent solution in (1:1) water + 5 N HCl.

PDAB solution : *p*-Dimethylamino benzaldehyde 1 percent solution in (1:0.5:0.5) Methanol : Water : 5N HCl.

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Dyes Intermediate Sectional Committee, PCD 11

<i>Organization</i>	<i>Representative(s)</i>
Atul Limited, Valsad, Gujarat	DR H. KAIWAR (<i>Chairman</i>) SHRI H. B. DHUVAD (<i>Alternate I</i>) DR J. G. DESAI (<i>Alternate II</i>) SHRI A. R. DESAI (<i>Alternate III</i>)
Ajanta Chemical Industries, New Delhi	SHRI S. D. BHARDWAJ SHRI KAPIL DEV (<i>Alternate</i>)
Colour-Chem Ltd, Mumbai	DR S. SIDDHAN SHRI A. K. CHATTERJEE (<i>Alternate I</i>) SHRI K. K. MEHTA (<i>Alternate II</i>)
Clariant India Ltd, Mumbai	DR J. N. SHAH SHRI K. S. RINDANI (<i>Alternate</i>)
Development Commissioner Small Scale Industries, New Delhi	SHRI S. R. SINGH DR J. S. REKHI (<i>Alternate</i>)
Hindustan Ciba-Geigy India Ltd, Mumbai	SHRI S. RAJAGOPALAN SHRI D. K. MURTHY (<i>Alternate</i>)
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Indian Dyestuff Industries Ltd, Mumbai	DR S. R. DESHMUKH SHRI S. D. PAWAR (<i>Alternate</i>)
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The Dyestuff Manufacturer's Association of India, Mumbai	DR M. G. NARSIAN DR S. C. AMIN (<i>Alternate</i>)
The Gujarat Small Scale Dyestuffs Manufacturer's Association, Ahmedabad	SHRI R. S. PATEL SHRI R. R. SHAH (<i>Alternate</i>)
BIS Directorate General	SHRI ANJAN KAR, Director and Head (PCD) [Representing Director General (<i>Ex-officio</i>)]
<i>Member Secretary</i>	
DR (SHRIMATI) VIJAY MALIK Director (PCD), BIS	

Bureau of Indian Standards

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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